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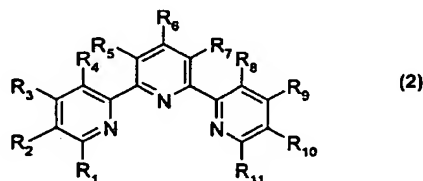
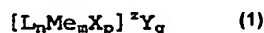
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(54) Title: USE OF METAL COMPLEX COMPOUNDS AS OXIDATION CATALYSTS



(57) Abstract: An automatic dishwasher detergent formulation comprising: - (a) a metal complex compounds of formula (1)  $[L_n Me_m X_p]^{zY_q}$  wherein Me is manganese, titanium, iron, cobalt, nickel or copper, X is a co-ordinating or bridging radical, n and m are each independently of the other an integer having a value of from 1 to 8, p is an integer having a value of from 0 to 32, z is the charge of the metal complex, Y is a counter-ion, q = z / (charge Y), and L is a ligand of formula (2); wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> are each independently of the others hydrogen; unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; cyano; halogen; nitro; -COOR<sub>12</sub> or -SO<sub>3</sub>R<sub>12</sub> wherein R<sub>12</sub> is in each case hydrogen, a cation or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; SR<sub>13</sub>, -SO<sub>2</sub>R<sub>13</sub> or -OR<sub>13</sub> wherein R<sub>13</sub> is in each case hydrogen or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; -N(R<sub>13</sub>)-NR'<sub>13</sub>R''<sub>13</sub> wherein R<sub>13</sub>, R'<sub>13</sub> and R''<sub>13</sub> are as defined above for R<sub>13</sub>; -NR<sub>14</sub>NR<sub>15</sub> or -N<sup>⊕</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub> wherein R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> are each independently of the other(s) hydrogen or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl, or R<sub>14</sub> and R<sub>15</sub> together with the nitrogen atom bonding them from an unsubstituted or substituted 5-, 6- or 7-membered ring which may optionally contain further hetero atoms; with the proviso that R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> are not simultaneously hydrogen, as a catalyst for oxidation reactions; and (b) an enzyme.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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